

The Blackall Woolscour



19 May 2014

Engineering the Golden Fleece

Power was provided initially by a single cylinder horizontal steam engine, 14 inch (53 cm) bore, 32 inch (81 cm) stroke with a flywheel of 8 feet (2.4 metres) diameter. Its provenance is unproven, but similar engines were manufactured by T & R Lees of England. It has been restored to full working order.

The sheds were designed by Harry Ricketts and constructed by Messrs Renshaw & Ricketts of Rockhampton. The machinery for the first scour line, which became operational in 1908, was imported from England. An Ajax stationary steam engine was installed to power the second scour line in 1915.

Critical Factors for Success

Besides a plentiful supply of wool, three factors were essential to the success of any woolscour: good management, an adequate water supply, and proximity to rail.

The Blackall Proprietary Woolscouring Company and its local grazier and businessmen Directors were responsible for the first.

A bore drilled on site in 1906/07 supplied the water and powered a Pelton Wheel generator providing 110V DC power to the scour and manager's house from 1910.

The railway reached Blackall circa 1905 and a plan for the siding to serve the woolscour was approved by Resident Engineer H B Fraser on 11 September 1907.



Scouring the Fleece

Scouring is the process of washing wool.

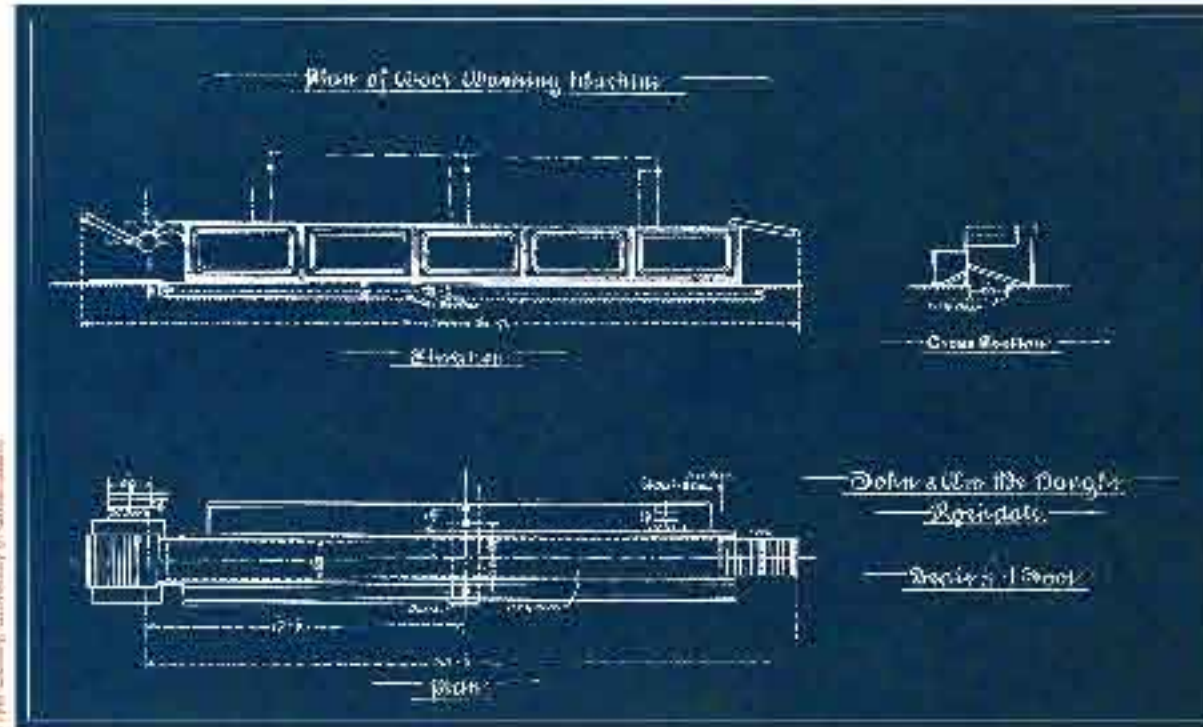
Many western-area fleeces were treated before despatch to market to remove the greasy lanolin, sweat residue, dirt, dust and other contaminants. Sheep had been washed before shearing but, from about 1840, fleeces were scoured by hand. Starting in the 1890s, large steam-powered mechanical scours were set up and by the 1920s there were 12 in Western Queensland.

In the scouring process at Blackall, the wool was moved through a number of tanks by a system of drive shafts, pulleys and fingered rakes. A soda-ash and then a soap wash removed greasy material, while the agitation dislodged heavy solids. The wool was then rinsed, dried, and packed again in bales.

The soap for the process was made on-site from mutton fat and caustic soda.



The steam engine flywheel



Blueprint of the scour line machinery for Blackall by John and William McNaught of Rochdale, Lancashire



Special train at Blackall, 1908



Blackall Woolscour Bore, 1908

To ensure the greasy material was dissolved, the water in the scour had to be at least 52°C. Water from the artesian bore on site is 58°C, making it ideal for scouring. 200 000 gallons a day (nearly a megalitre) were needed at full capacity. Steam was fed into the tanks to maintain a constant temperature.



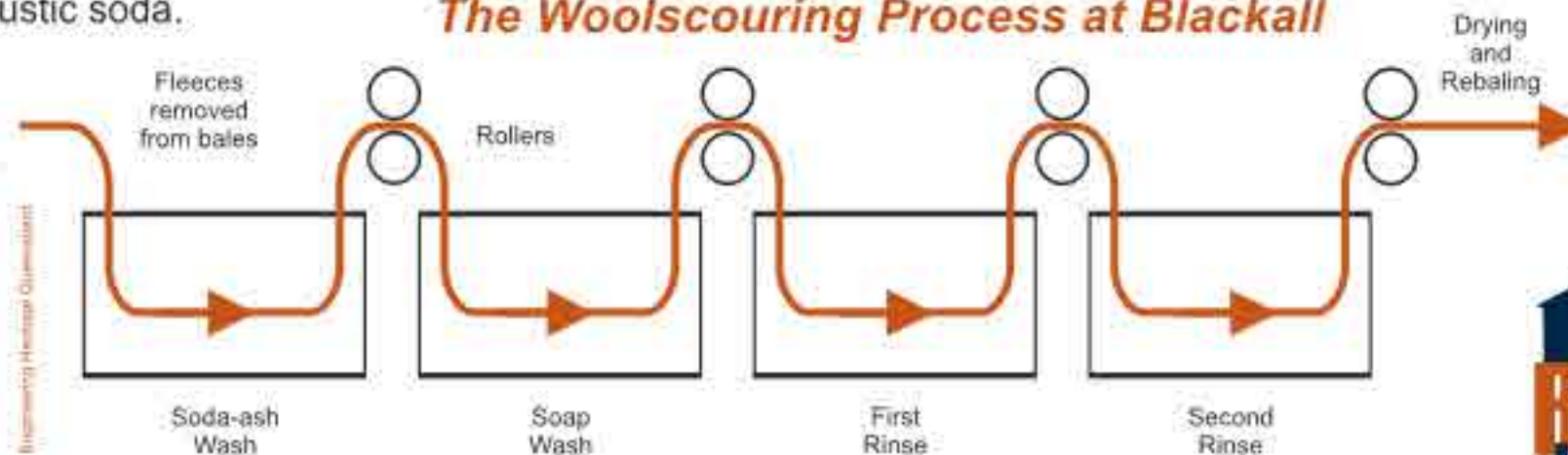
Drive shaft and pulleys on the No 1 Scour Line

The Blackall Legacy

This woolscour operated commercially from 1908 to 1978. In 1989, the Blackall Historical Woolscour Association Inc was formed to restore and operate the premises for cultural tourism. Blackall has the only intact steam-powered wool washing plant left in Australia. With most of its earliest machinery still on site, scouring the woollen fleeces can still be demonstrated in the same manner in which it was done more than a century ago.

Its significance as a living museum, with a direct physical link to Australia's pioneering era, and its demonstration of civil, structural, mechanical, electrical, chemical and process engineering of the early 20th century, was recognised as being of national engineering heritage significance when Engineering Heritage Australia awarded an Engineering Heritage National Marker.

The Woolscouring Process at Blackall



For more details about this and other engineering heritage works, www.engineersaustralia.org.au/heritageregister/search



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